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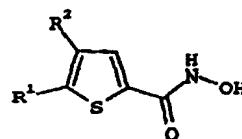
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(54) Title: SUBSTITUTED THIENYL-HYDROXAMIC ACIDS AS HISTONE DEACETYLASE INHIBITORS



(I)

(57) Abstract: A compound of formula (I) which can be used in the treatment of diseases associated with histone deacetylase enzymatic activity.

INTERNATIONAL SEARCH REPORT

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nal Application No
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A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C07D409/04 C07D413/04 C07D409/14 C07D417/14 C07D413/14
A61K31/38 A61P35/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 C07D A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, CHEM ABS Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JUNG M ET AL: "Analogues of trichostatin A and trapoxin B as histone deacetylase inhibitors" BIOORGANIC & MEDICINAL CHEMISTRY LETTERS, OXFORD, GB, vol. 7, no. 13, 8 July 1997 (1997-07-08), pages 1655-1658, XP004136274 ISSN: 0960-894X the whole document ---	1-34
A	WO 02 26696 A (ROMERO MARTIN MARIA ROSARIO ;FINN PAUL W (GB); HARRIS C JOHN (GB);) 4 April 2002 (2002-04-04) claim 1; example 189 ---	1-34 -/-

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>RICHON V M ET AL: "A CLASS OF HYBRID POLAR INDUCERS OF TRANSFORMED CELL DIFFERENTIATION INHIBITS HISTONE DEACETYLASES"</p> <p>PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF USA, NATIONAL ACADEMY OF SCIENCE. WASHINGTON, US, vol. 95, no. 6, 17 March 1998 (1998-03-17), pages 3003-3007, XP001120542 ISSN: 0027-8424 table 1</p> <p>---</p>	1-34
A	<p>WO 00 66555 A (ZHANG PUWEN ; ZHI LIN (US); FENSOME ANDREW (US); JONES TODD K (US);) 9 November 2000 (2000-11-09) Cf. ex. 60 the whole document</p> <p>-----</p>	1-34

INTERNATIONAL SEARCH REPORT

Information on patent family members

Intel'l Application No
PCT/GB 03/03168

Patent document cited in search report	Publication date		Patent family member(s)	Publication date
WO 0226696	A 04-04-2002	AU	9013401 A	08-04-2002
		CA	2423868 A1	04-04-2002
		EP	1335898 A1	20-08-2003
		WO	0226696 A1	04-04-2002
WO 0066555	A 09-11-2000	US	6355648 B1	12-03-2002
		AU	4681400 A	17-11-2000
		BG	106078 A	31-05-2002
		BR	0010216 A	19-03-2002
		CA	2371633 A1	09-11-2000
		CN	1349499 T	15-05-2002
		CZ	20013950 A3	12-06-2002
		EP	1181275 A1	27-02-2002
		HU	0200993 A2	29-07-2002
		JP	2002543182 T	17-12-2002
		NO	20015380 A	03-01-2002
		PL	351407 A1	22-04-2003
		SK	15902001 A3	06-11-2002
		TR	200103288 T2	22-04-2002
		WO	0066555 A1	09-11-2000
		US	2002103248 A1	01-08-2002
		US	2002169198 A1	14-11-2002
		US	6583145 B1	24-06-2003